



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

117

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,571	03/11/2004	Peng Lee	026018.50271	2570
28172 7590 06/14/2007 BUTLER, SNOW, O'MARA, STEVENS & CANNADA PLLC 6075 POPLAR AVENUE SUITE 500 MEMPHIS, TN 38119			EXAMINER JAGAN, MIRELLYS	
			ART UNIT 2859	PAPER NUMBER
			MAIL DATE 06/14/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/708,571	LEE ET AL.	
	Examiner	Art Unit	
	Mirellys Jagan	2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10,26-30 and 60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10,26-30 and 60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the ASTM-C1060-90 standard titled "Standard Practice for Thermographic Inspection of Insulation Installations in Envelope Cavities of Frame Buildings" in view of the publication titled "InfraMation 2002 (262 Pages) – Table of Contents" [hereinafter InfraMation] and the publication titled "100's of Tips on Saving Energy and Money at Home" (www.mississauga4sale.com/newsletter/energy_saving_tips.htm) by Argentino.

Art Unit: 2859

ASTM-C1060-90 discloses a method of inspecting building components, the method comprising:

preparing a building for inspection by creating a temperature differential of greater than 10°F (18°C) between the inside and the outside of the building and maintaining it for a period of time; and then

obtaining temperature profiles of an exterior building wall;

obtaining temperature profiles of the interior of a pitched roof (attic);

obtaining temperature profiles of interior building components;

assessing each profile to detect a thermal anomaly (air leakage/poor insulation)

indicative of a problem with the building components; and

reporting the thermal anomaly indicative of a problem to a designated entity;

wherein the steps up to assessing each profile occurring within 4 hours (an hour or two, see last sentence of section X2.4) (see sections 1.4; 4.1; 5.1; 9.23; 9.41; 10.24; 10.241; 10.2.4.4; X2.2; and X2.4).

ASTM-C1060-90 does not disclose the particular interior building components, obtaining temperature profiles of each electrical outlet in the building, the preparing step including turning on substantially all light switches and exhaust blowers in the building, and the temperature profiles detecting moisture.

Argentino discloses that energy audits are conducted in a residential building by using an infrared camera to inspect the interior building components for poor energy efficiency. An infrared camera obtains thermal images (temperature profiles) of the detected building components, and will show the presence of air infiltration or poor thermal insulation of the

Art Unit: 2859

building. The interior building components that should be inspected include the building's electric wires and box, all ducts, and electrical outlets and switches because these are all sources of air infiltration or poor thermal insulation of the building that will affect the energy efficiency of the building (see "Insulation" on pages 2-3; "sources of Air Leaks in Your Home" on pages 3-4; and "Ducts" on pages 7-8).

InfraMation discloses that it is known in the art that infrared thermography, i.e., thermal imaging/profiling, is used to inspect building envelopes by detecting both moisture and air leakage (see last page, title: "Nondestructive testing of building envelope systems using Infrared thermography" by Snell).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of ASTM-C1060-90 by obtaining temperature profiles of all of the electrical outlets and ducts when inspecting the interior components of the building, since Argentino teaches that these are sources of air infiltration that will affect the energy efficiency of the building.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of ASTM-C1060-90 and Argentino by turning on substantially all light switches when testing the electric outlets and turning on substantially all exhaust blowers when testing the ducts in order to determine the location of any thermal anomaly in all of the electric outlets and ducts at once, i.e. the current in the electrical outlets must be active in order to determine a thermal anomaly in the outlets, and air must be flowing through the ducts in order to determine if there is a thermal anomaly in the ducts. Accordingly, it would have been obvious to one having ordinary skill in the art at

Art Unit: 2859

the time the invention was made to modify the method of ASTM-C1060-90 and Argentino by turning on substantially all light switches and exhaust blowers in the building during the preparing step since Argentino teaches that these are sources of air infiltration that will affect the energy efficiency of the building. Therefore, turning them on before obtaining the temperature profiles would have been obvious in order to obtain more accurate temperature profiles of the energy efficiency of the building.

In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of ASTM-C1060-90 by using the temperature profiles to detect moisture, as disclosed by InfraMation, in order to prevent water damage to a building, and since InfraMation discloses that it is known in the art that infrared thermography, i.e., thermal imaging/profiling, is used to inspect building envelopes by detecting both moisture and air leakage.

3. Claims 26-30 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over ASTM-C1060-90 in view of Argentino and the publication titled "Infrared Inspection: Sample Home Inspection" by Boldstar.

ASTM-C1060-90 discloses a method of inspecting interior building components, the method comprising:

obtaining temperature profiles of interior building components; and

assessing each profile to detect an anomaly (air leakage/poor insulation) indicative of a problem;

Art Unit: 2859

wherein the steps up to assessing each profile occurring within 4 hours (an hour or two, see last sentence of section X2.4).

ASTM-C1060-90 does not disclose the interior building components including all of the electrical outlets and assessing their profiles for an anomaly indicating an electrical problem such as overload, contact surface heat, or hot wire; recording the temperature profiles on a digital recording device; and turning on substantially all light switches and exhaust blowers in the building.

Argentino discloses that energy audits are conducted in a residential building by using an infrared camera to inspect the interior building components for poor energy efficiency. An infrared camera obtains thermal images (temperature profiles) of the detected building components, and will show the presence of air infiltration or poor thermal insulation of the building. The interior building components that should be inspected include the building's electric wires and box, all ducts, and electrical outlets and switches because these are all sources of air infiltration or poor thermal insulation of the building that will affect the energy efficiency of the building (see "Insulation" on pages 2-3; "sources of Air Leaks in Your Home" on pages 3-4; and Ducts" on pages 7-8).

Boldstar discloses a method of inspecting interior building components that includes obtaining temperature profiles of electrical circuits in the building (electrical panel), and assessing the thermal profiles for an anomaly indicative of an electrical problem such as overheating, circuit overload, or connection overheating (i.e., hot wire), wherein the profiles are recorded on a digital recording device (see images).

Art Unit: 2859

Referring to claim 26, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of ASTM-C1060-90 by obtaining temperature profiles of all of the electrical outlets and ducts when inspecting the interior components of the building, since Argentino teaches that these are sources of air infiltration that will affect the energy efficiency of the building.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of ASTM-C1060-90 and Argentino by further assessing the profiles of the electrical outlets for an anomaly indicating electrical problems, as disclosed by Boldstar, in order to determine if the circuits are overheating. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of ASTM-C1060-90, Argentino, and Boldstar above by turning on substantially all light switches when testing the electric circuits and turning on substantially all exhaust blowers when testing the ducts in order to determine the location of any thermal anomaly in all of the electric circuits and ducts, i.e. the current in the electrical circuits must be active in order to determine a thermal anomaly in the circuits, and air must be flowing through the ducts in order to determine if there is a thermal anomaly in the ducts.

In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of ASTM-C1060-90, Argentino, and Boldstar by turning on substantially all light switches and exhaust blowers in the building before obtaining the temperature profiles because Argentino teaches that these are sources of air infiltration that will affect the energy efficiency of the building, and, therefore, turning

Art Unit: 2859

them on before obtaining the temperature profiles will allow a user to obtain more accurate temperature profiles of the energy efficiency of the building.

Response to Arguments

4. Applicant's arguments that ASTM-C 1060-90 does not relate to finding problems in exterior residential building components such as exterior wall, eave and fascia, and interior surface of a pitched roof are not persuasive since section 1.1 states that walls, ceilings, roofs, and floors are inspected; sections 9.4.1-9.4.2 state that exterior building components are inspected; and section X2.4 states that exterior wall and interior surface of a pitched roof (attic) are inspected.

Applicant appears to rely on section 5.1 of ASTM-C 1060-90 as support for his assertion that ASTM-C 1060-90 does not teach using thermal imaging to detect increased moisture content in these areas because the thermal images are used to test insulation in these areas. However, these arguments, and Applicant's arguments regarding the amount of time it takes to perform the test, i.e., within four hours, are moot in view of the new grounds of rejection.

Applicant's argument that Argentino fails to disclose the components that can be detected with infrared cameras are not persuasive because Argentino discloses specific interior components that should be tested on pages 3-4 ("Sources of Air Leaks In Your Home"). Furthermore, Applicant's arguments that Argentino does not disclose any limitations of claim 10 because it is not enabling are not persuasive because Argentino teaches certain steps for energy auditing a building ("Energy Auditing Tips"), specific

Art Unit: 2859

sources of energy leaks that exist in a building (“Sources of Air Leaks In Your Home”), and discloses that IR cameras are known to be used to perform energy audits (“Formulating Your Plan”). These teachings are enabling because they teach a person that an energy audit is performed using IR camera at particular locations within a building. Therefore, the reference is enabling because a person having ordinary skill in the art would be able to perform a test as taught by Argentino.

Applicant’s arguments that Boldstar fails to relate to claim 26 because Boldstar discloses taking an image of an electrical panel instead of the claimed electrical outlet are not persuasive because Boldstar was not relied upon to teach testing electrical outlets. Argentino was relied upon to teach testing electrical outlets for thermal *leaking* problems, whereas Boldstar was relied upon to teach testing electrical elements for *electrical* problems.

Applicant’s arguments regarding the step of turning on substantially all light switches and exhaust blowers in the building are not persuasive since the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). In this case, the cited prior art (Argentino) teaches obtaining temperature profiles of the electrical outlets/circuits and ducts when inspecting the interior components of the building, and assessing the profiles of all of the electrical outlets and ducts for an anomaly indicating an electrical problem to determine if the circuits are overheating and to determine if the ducts are leaking, respectively. Therefore, turning on substantially all light switches and substantially all exhaust blowers in the building ducts when performing such tests is within the knowledge that is generally available to one of ordinary

Art Unit: 2859

skill in the art because they must be performed in order to inspect all of the electrical outlets and ducts. Furthermore, performing such steps are beneficial because an individual can test all of the electrical outlets and ducts without having to move from one area to another turning each on outlet and duct blowers, i.e., saves time to turn them all on at once and inspect them while they are all on.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mirellys Jagan whose telephone number is 571-272-2247. The examiner can normally be reached on Monday-Friday from 11AM to 5PM.

Art Unit: 2859

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJ
June 7, 2007



Diego Gutierrez
Supervisory Patent Examiner
Technology Center 2800